



US005766264A

# United States Patent [19]

Lundt

[11] Patent Number: **5,766,264**  
[45] Date of Patent: **Jun. 16, 1998**

[54] **MULTI-AXIS PROSTHETIC ANKLE JOINT**

[75] Inventor: **Judd E. Lundt**, Hermosa Beach, Calif.

[73] Assignee: **United States Manufacturing Company**, Pasadena, Calif.

[21] Appl. No.: **705,658**

[22] Filed: **Aug. 30, 1996**

[51] Int. Cl.<sup>6</sup> ..... **A61F 2/64**

[52] U.S. Cl. .... **623/47; 623/50**

[58] Field of Search ..... **623/47, 48, 49, 623/50, 52**

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

53,931	4/1866	Weston	623/48
292,800	2/1884	Furrer	623/52
4,364,128	12/1982	Mummert	623/50
4,395,783	8/1983	Eyre	623/47
4,605,417	8/1986	Fleishauer	623/49
5,019,109	5/1991	Voisin	623/52
5,258,038	11/1993	Robinson	623/47
5,482,513	1/1996	Wilson	623/47
5,545,234	8/1996	Collier	623/49

**OTHER PUBLICATIONS**

Voisin, Jerome P., Dual-Ankle Springs, Multi-Axial Rotation System. D.A.S. M.A.R.S.<sup>TM</sup>, Acadian Prosthetics & Orthopedic Aids, Inc.

Endolite 'Multiflex', Foot and Ankle Combination. Foot and Ladies Multiflex, Endolite North America, Certificate No. FM29097, IS09001, EN46001.

Improved Multiflex Foot and Ankle. 509153-509170, Blatchford Endolite, Chas. A. Blatchford & Sons Ltd., Blatchford: 934609, Issue 03/0093.

OWW Single Axis Foot, Ohio Willow Food Company, PH-1065-A, Oct. 1, 1994.

*Primary Examiner*—Michael J. Milano

*Attorney, Agent, or Firm*—Christie, Parker & Hale, LLP

[57] **ABSTRACT**

A multi-axis prosthetic ankle joint comprising a housing having a bottom portion and a top portion having a front bumper and rear bumper positioned within the housing between the bottom portion and the top portion. The front and rear bumpers and the top and bottom portions of the housing each contain at least one flange which are overlapping and include an axially aligned hole for receipt of a pin. The holes in the upper housing flanges are elongated to provide multiple axes of motion for the ankle joint. The ankle joint is adapted to be rigidly connected between a lower leg component and a foot component.

**12 Claims, 3 Drawing Sheets**

